

## High Risk Patients: Diabetes, Heart Failure, Renal Failure, Others (TCTAP A-172 to TCTAP A-186)

### TCTAP A-172

#### Association Between Serum Uric Acid and eGFR in Patients with Type 2 Diabetes and Coronary Artery Disease

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**Background:** The value of uric acid in the assessment of renal function and prognosis in high-risk patients is still unclear and deserves further research. The aim of the present study is to investigate the relationship between uric acid and estimated glomerular filtration rate (eGFR) in type 2 diabetic patients combined with coronary artery disease (CAD) in China.

**Methods:** From November 2009 to December 2010, we consecutively enrolled 526 patients with type 2 diabetes and CAD and measured plasma levels of uric acid and creatinine. All patients underwent elective coronary angiography for evaluation of coronary stenosis and patients with 50% stenosis in at least one coronary artery were considered to have CAD. An eGFR was calculated with the MDRD formula and patients with eGFR < 60 ml/min/1.73 m<sup>2</sup> were classified as having renal dysfunction. Plasma levels of uric acid, baseline clinical characteristics, and six-month follow-up results were collected and analyzed. Multivariate logistic regression models were used to estimate the odds ratios (ORs) for renal dysfunction.

**Results:** 23 patients were lost and six-month follow-up rate was 95.6%. Uric acid levels were negatively associated with eGFR ( $p=0.002$ ), especially in patients with renal dysfunction (eGFR < 60 ml/min/1.73 m<sup>2</sup>) ( $r = 0.304$ ,  $p<0.001$ ). In the highest quartile of uric acid levels, the risk was substantially higher for reduced renal function [odds ratio 9.18, (95% confidence interval (CI) 4.01-21.01)] ( $P < 0.001$ ) compared with that in the lowest quartile of uric acid levels without adjustment and OR was 9.10 [95% CI 3.93-21.09] after adjustment. Moreover, the similar results remained after six-month follow-up.

**Conclusion:** Uric acid levels are negatively associated with eGFR and act as an independent risk factor for renal dysfunction in patients with type 2 diabetes and CAD.

### TCTAP A-173

#### The Impact of Low Dose Aspirin on 5-year Clinical Outcomes in Patients with Coronary Artery Spasm as Assessed by the Intracoronary Acetylcholine Provocation Test

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**Background:** Low dose aspirin (LDA) was known to be more frequently associated with coronary artery spasm (CAS) and ischemic symptoms, as well as severe and multivessel spasm. The aim of this study was to evaluate the impact of LDA on clinical outcomes up to 5 years in confirmed CAS patients (pts).

**Methods:** A total of 5,053 consecutive pts without significant coronary artery disease who underwent acetylcholine (Ach) provocation test from Nov 2004 to Oct 2010 were enrolled. Among them, a total of 3004 pts were finally diagnosed as significant CAS. During 5 years, a total of 1,072 pts were followed, and patients were divided into two groups depending on the use of LDA: LDA group (n=43 pts) and no LDA group (n=1029 pts).

**Results:** The baseline clinical characteristics showed that the prevalence of old age, diabetes mellitus, hypertension, and hyperlipidemia were higher in LDA group. During the Ach test, the incidence of multivessel spasm and the response rate to lower Ach doses were higher in LDA group. The cumulative clinical outcomes including mortality, myocardial infarction, and cerebrovascular disease (CVD) up to 5 years were similar between two groups. However, the incidence of de Novo percutaneous coronary intervention (PCI), repeated coronary angiogram (CAG) due to recurrent chest pain, MACE and MACCE were higher in LDA group (Table). Multivariate analysis showed that LDA was a strong predictor of repeated CAG due to recurrent chest pain (OR:2.6, 95% CI: 1.4-5.0,  $p$ -value=0.004).

**Conclusion:** In this study, the CAS patients with use of LDA was related to higher incidence of 5-year clinical outcomes and LDA was a strong predictor of repeated CAG due to recurrent chest pain during 5 years, requiring more intensive medical therapy and close clinical follow up.

Variable, N (%)	LDA (n=43)	No LDA (N=1029)	p-value
Mortality	1 (2.3)	14 (1.4)	ns
Cardiac death	0 (0.0)	5 (0.5)	ns
De Novo PCI	3 (7.0)	18 (1.7)	0.048
Myocardial infarction (MI)	0 (0.0)	10 (1.0)	ns
Cerebrovascular accidents (CVA)	1 (2.3)	7 (0.7)	0.280
Repeat CAG	16 (37.2)	189 (16.4)	0.001
MACE	4 (9.3)	31 (3.0)	0.048
MACCE	17 (39.5)	182 (17.7)	0.001
(Mortality, PCI, MI, CVA, Repeat CAG)			

### TCTAP A-174

#### Left Ventricular Mass Index and Septal E/E' Ratio Is Associated with Coronary Artery Calcium Score Severity in Subjects with Normal Left Ventricular Ejection Fraction

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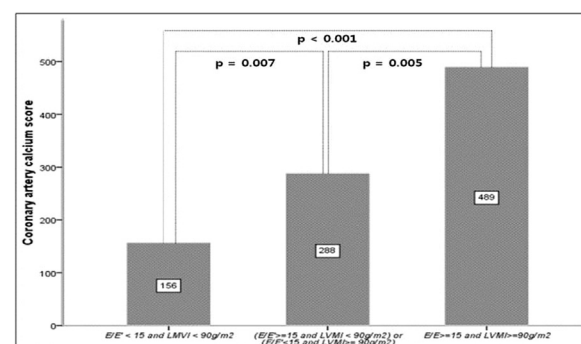
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**Background:** There have been little data regarding the association between composite of both left ventricular mass index (LVMI) and LV diastolic function and CACS. The objective of this study is to determine whether there are association between the composite of both LVMI and septal E/E' ratio (E/E') and coronary artery calcium score (CACS) severity in subjects with normal LV ejection fraction.

**Methods:** We investigated 1230 consecutive subjects that CACS, LVMI and E/E' were measured by coronary computed tomography (CT) and echocardiography. LVMI and septal E/E' ratio were compared between the CACS=0 group and CACS>0 group. Further, severity of CACS (no, mild, moderate, and severe calcification) were evaluated according to LVMI and septal E/E' ratio. According to the composite of LVMI  $\leq 90$  g/m<sup>2</sup> and E/E'  $\leq 15$ , three groups were categorized as follows; 'echo scoring system'=0,1,2.

**Results:** In multivariate regression analysis, both LVMI, and E/E' were independent predictors of CACS>0. Each CACS of the 3 groups was 155.99 $\pm$ 386.50, 287.51 $\pm$ 745.52, and 489.00 $\pm$ 913.49, respectively ( $p<0.001$ ). In the post hoc analysis, there was statistically significant difference among the three groups. In the multivariate linear regression analysis, 'echo scoring system' was an independent predictor of CACS.

**Conclusion:** In our study, LVMI and E/E' were associated with presence and severity of CACS. The combination with LVMI and E/E' can be more accurate predictors of CACS than LVMI or E/E' alone.



**Figure 1.** The association of coronary artery calcium score severity and the composite of LVMI and E/E'. In the presenting data, the median value of LVMI was 89.9 g/m<sup>2</sup>. In the criteria of E/E'  $\geq 15$  and LVMI  $\geq 90$  g/m<sup>2</sup>, the CACS of three group was 155.99 $\pm$ 386.50, 287.51 $\pm$ 745.52, and 489.00 $\pm$ 913.49 respectively.